Bureau of Health
Maine Department of Health
and Human Services

Office of Public Health
Emergency Preparedness

Assessment of Maine's Health System Capacity For Public Health Emergencies

Final Report

January 2005

Phone 207-287-3796
Fax 207-287-9058
TTY 207-287-8066

Key Plaza, 8th Floor
11 State House Station
Augusta, Maine 04333-0011

Acknowledgements

The Regional Resource Center Statewide Coordinating Committee meets monthly and provides policy oversight for the statewide public health emergency preparedness planning process. A subcommittee developed a web-based survey instrument to assess Maine's health system capacity to respond to public health emergencies. The Bureau extends its gratitude for the many hours donated by the following members and agencies for their service: Sandra Parker and Maine Hospital Association, Jay Bradshaw and Maine Emergency Medical Services, Art Cleaves and Rayna Leibowitz and Maine Emergency Management Agency, Dr. Anthony Tomassoni and Northern New England Poison Center, Joan Smyrski and Department of Health and Human Services, Sophie Glidden and Maine Office of Rural Health and Primary Care, and Paul Kuehnert and Office of Public Health Emergency Preparedness. Special recognition is noted for the Regional Resource Center Directors; Steve Trockman, Carolyn Reilly, Kathy Knight and their staff.

Contents

Tables

Figures

I. Executive Summary

This report on Maine's health care system's capacity and readiness for public health emergencies:

- Summarizes the major findings of the assessments to date;
- Analyzes the finding in comparison to currently available national standards for health system readiness for public health emergencies; and
- Makes a set of recommendations for action, *first* to achieve *all* minimal levels of readiness by year-end 2005, and to achieve current national standards by year-end 2006.

The report found that Maine's health care and public health systems are not prepared to respond to a large patient surge resulting from a public health emergency. Hospitals, the major provider of patient care in emergencies, not only lack the necessary bed capacity, but also a formal system to coordinate patient care across institutions and agencies. Maine's health care system lacks institutionalized processes for handling victims, staffing, and equipment during emergencies. Connecting health care, public health and emergency management systems is a vital step towards developing a coordinated emergency preparedness public health system. The development of inter disciplinary planning relationships within all sectors of the health system is also crucial to systems development. The lack of a coordinated system is the main barrier to establishing a public health emergency response.

The report found that Maine's health care agencies need equipment and supplies to respond to public health emergencies. The health care system lacks adequate isolation equipment, pharmaceuticals and protective gear. A robust communications system that contains backup systems available in emergencies is also needed. Currently hospitals have limited communication with other hospitals and rely on cell phones as a backup system for landlines. Radio communication, where available, is limited to emergency medical service providers and often relies on radio equipment that is over twenty-years old.

Finally the report targeted the need for education and training of the health care workforce to prepare and respond to public health emergencies. Specifically, bioterrorism training was noted as a high-need area. Barriers to training include travel and compensation for additional staff during training sessions.

The lack of systems development was noted throughout the findings. The ability to care for additional patients beyond normal functions is a measure of emergency preparedness. Readiness is achieved through systems development (coordinated plans, protocols and procedures), purchasing equipment, and training the health care workforce.

The following recommendations are made:

1. **Systems Planning:**
   Connect health care, public health, and emergency management plans across disciplines and at all levels of operations by June 30, 2005.
   - Develop agency, county, regional and statewide public health emergency preparedness plans and connect to existing emergency plans.
   - Develop written agreements between agencies to share resources.
     - Equipment
     - Personnel
   - Create protocols and procedures for regional caches of supplies, pharmaceuticals and durable medical equipment.
   - Develop New England wide system for sharing resources.
   - Develop protocols and procedures for initial stabilization, triage, treatment and transfer of patients.

2. **Purchase Equipment and Supplies:**
   Provide health care workforce and citizens protection during public health emergencies by June 30, 2005.
   - Purchase Personal Protective Equipment (PPE) to protect health care workers.
   - Purchase equipment for hospitals to provide negative pressure isolation.
   - Purchase pharmaceuticals and durable equipment needed to protect Maine citizens.
   - Purchase interoperable secure redundant radio equipment for all hospitals, emergency medical services (EMS), and health centers following Maine Emergency Management Association *Draft Standards for State of Maine Radio Systems.*

3. **Educate and Train:**
   Establish a core workforce trained in bioterrorism and other public health emergencies ongoing annual basis.
   - Following Maine's Training Plan (2003): *Bioterrorism and Public Health Emergency Preparedness and Response*; continue implementation of training for Maine's public health and healthcare workforce, providing basic capacities needed for bioterrorism and public health emergency preparedness and response.
   - Create an emergency preparedness exercise database that may be utilized by preparedness planners across Maine.
   - Promote utilization of hospital decontamination training provided by Maine Emergency Management Agency (MEMA).

II. Introduction and Overview

Maine has a population of 1.27 million, 3,500 miles of coastline, 2,000 coastal islands, 6,000 lakes and ponds, and geographically is almost as large as all the other 5 New England States put together[1]. In addition to being a large State with abundant inland and coastal beauty, Maine is known as a four-season vacationland hosting year-round frequent visitors. In 2002, 64 cruise ships carrying 120,000 passengers and crewmembers docked in Bar Harbor, a popular resort town on Mount Desert Island in *downeast* Maine[2]. However, not all visitors are desirable. Maine is remembered as the destination of two hijackers, who rented a room in Portland, Maine the night before crashing American Airlines Flight 11 into the World Trade Center[3]. Other considerations; Maine is easily accessible by land, sea and air. Maine borders Canada, has 7 rail companies with 1,400 miles of tracks, 32,000 miles of roads, 7 seaports, and 46 public airports. Of the airports, 15 accommodate jets and 2 are international jetports: located in Portland and Bangor[4]. In 2001, Maine tourism generated 2.5 billion in wages and salaries and 344 million in taxes and revenues[2]. Hence, the State will continue to rely on tourism as a major part of its economy. Further, the State's robust transportation system creates opportunities for accidental spills of hazardous materials and the introduction of emerging diseases. The ability to detect and monitor disease is a function of public health and the health care sector.

Maine's health care system consists of hospitals, emergency medical services (EMS), health clinics, behavioral health services, ambulatory care clinics, private practitioners, school health nurses and a myriad of allied health professionals. Maine's primary providers of emergency care are its hospitals that are heavily dependent on EMS services. Three of Maine's 41 hospitals are trauma centers and are located in the southern to central Maine area. Additionally, Maine's health care workforce of 22,000 is on the decline[5]. Lastly, the State does not have a public health infrastructure in any of its 16 Counties. Only two cities have an Office of Public Health: Portland and Bangor. This report analyzes Maine's public health, health care, and the emergency management system and makes recommendations to strengthen and connect individual systems into an all inclusive seamless public health emergency preparedness system. The new system will be able to prepare and respond across disciplines to all public health emergencies in Maine. Maine's public health system must be able to respond to incidents of natural disasters, purposeful acts of bioterrorism, and to halt the spread of communicable diseases (e.g., pandemic flu).

Since mid-2002, the Maine Bureau of Health has conducted five, and Maine Emergency Medical Services has conducted one, assessments of various parts of the public health and health care systems in Maine in relation to their ability to respond to public health emergencies[6]. These assessments have been conducted to determine the level of preparedness and/or capacity of

[1] http://www.state.me.us/legis/senate/statehouse/facts/facts.htm
[2] http://www.maine.gov/dep/blwq/topic/vessels/repCruiseReport.pdf
[3] http://foi.missouri.edu/terrorbkgd/hijackerincity.html
[4] http://www.madisonbusinessgateway.com/maine_infrastructure.html
[5] http://www.themha.org/pubs/Maine_s%20Healthcare%20Workforce.pdf
[6] A public health emergency is a natural disaster (such as pandemic influenza or an ice storm) or a terrorist act (such as biological, chemical, or radiological agent released; or high yield explosion).

various components of the health care system[7] or its connectivity with the emergency management system[8], and, most recently, of the health care system as a whole and the interconnectivity between its subsystems[9].

The National Hospital Bioterrorism Preparedness Program has established measures of a State's ability to surge beyond the normal needs during emergencies. The program measures surge capacity in ten priority areas. Results of the *Assessment of Regional Health System Capacity for Public Health Emergency Preparedness* indicate that Maine is currently able to meet five of the Minimum Levels of Readiness but only able to meet two of the Critical Benchmarks. Critical Benchmarks are a higher measure of readiness than the Minimum Levels of Readiness. The health system surge capacity priority areas are:

1. Bed Capacity (system to triage, treat and stabilize a measured surge in patients)
2. Isolation Capacity (system to isolate a measured surge of infectious patients)
3. Health Care Personnel (system to deploy personnel to support patient surge)
4. Health Care Personnel (system for advanced registration and credentialing of personnel)
5. Pharmaceutical Caches (system to protect personnel and community)
6. Personal Protection Equipment (system to provide adequate protection to personnel)
7. Decontamination (system to decontaminate patients and personnel)
8. Behavioral Health (system to train professionals and treat patients)
9. Trauma and Burn (system to treat measured surge in trauma and burn patients)
10. Communications and Information Technology (establish communications system)

It is our hope that this report can serve both as an accurate summation of current health system readiness and capacity in Maine, and as a roadmap for actions that will lead to rapid improvements.

[7] Health Alert Network Assessment & Planning Project HAN Survey Summary, Bioterrorism Preparedness Sentinel Laboratory Assessment, Survey Findings: Assessment of Regional Health System Capacity for Public Health Emergency Response, Maine Hospital Assessment Survey for Emergency Preparedness, Special Populations Risk Communication Assessment, and An Assessment of the Maine EMS System
[8] The Muskie School of Public Service, *County-Based Health System Emergency Preparedness Assessment*, Institute of Public Sector Innovation, University of Southern Maine
[9] *Survey Findings: Assessment of Regional Health System Capacity for Public Health Emergency Response.* Appendix A

III. Summary of Maine's Health System Assessments Related to Public Health Emergency Preparedness

Eight assessments conducted from 2002 to the present have measured components of Maine's health system infrastructure. In particular, Maine's capacity, or lack thereof, to provide care both on a routine basis and during emergencies. The assessments have analyzed hospital systems within the larger healthcare system. Hospitals are the main providers of emergency and specialty health care and serve as the principal receiving agency of the acutely injured on a routine basis. By no means can hospitals function in a vacuum during emergencies. Hence, the hospital system was a major focus of the assessments.

The eight health system assessments analyzed for this report provide an overview of assessment purposes, survey tools, conclusions and summaries of each. Although the individual assessment objectives and survey instruments varied, the reports focused on identifying resources and measuring capacity of Maine's emergency preparedness infrastructure.

A. *Maine Hospital Assessment Survey for Emergency Preparedness*, Maine, 2002

Purpose:

- The purpose of the assessment was to evaluate the current hospital preparedness and determine the needs of Maine's hospitals for bioterrorism and other weapons of mass destruction.

Assessment Tool:

- The assessment tool was a survey completed by each of Maine's 41 hospitals.

Conclusions:

The survey results indicate that Maine's hospitals have not completely addressed emergency preparedness; the levels of preparedness varied, and were relatively low in several areas examined.

- Most hospitals incorporated emergency drills and exercises into emergency preparedness plans,
- Most plans addressed personnel augmentation during a large-scale emergency events,
- Low rankings for management of volunteer help, items donated to assist in an incident, pharmaceuticals and vaccines,
- Maine hospitals were not well prepared to adequately react to incidents, large numbers of casualties, or for the treatment, isolation, and quarantine of communicable diseases, and
- Most hospitals had neither assessed staff needs nor developed protocols related to bioterrorism education and training.

In 2002, Maine's 41 hospitals completed initial bioterrorism preparedness assessments relating to emergency preparedness plans and mass casualty care. The survey results indicate about one-third of Maine hospitals have adequately addressed emergency preparedness general issues within their emergency plans. Planning is not the only area of concern for hospitals; bioterrorism training and education were also not addressed appropriately. Only 8% of hospitals had conducted bioterrorism specific training and education. Hospital emergency preparedness

ranked low (less than 30%) in the following areas: overall training, staff credentialing and supervision, and physician protection. Further, just 18% of hospitals include: procedures for volunteer help and donated items, and have mass pharmaceutical and vaccination plans. However, 85% of Maine hospitals do participate in drills and exercises. Additionally, 77% of hospitals did say their plans do address personnel augmentation during large-scale emergencies.

B. *Maine Health & Environmental Testing Laboratory: Bioterrorism Preparedness Sentinel Laboratory Assessment,* Maine, 2003

Purpose:

- The purpose of the assessment was to ascertain the ability of Maine's sentinel (clinical) laboratories to respond to a bioterrorism event.

Assessment Tool:

- The assessment comprised of questionnaires prepared by the Health and Environmental Testing Laboratory and administered by face-to-face interviews.

Conclusions:

- The questionnaire results indicate the majority of sentinel laboratories do not have laboratorians who work exclusively in the microbiology department,
- Regional training sessions on select bioterrorism agents will allow more laboratorians the opportunity to attend tutoring, and
- Preparing sentinel laboratories to detect emerging infectious diseases (naturally or by terrorists) will enhance the State's ability to provide for the public health of all its citizens.

Within the hospital system, the capacity of laboratories to respond to a bioterrorism event via their ability to identify biological agents was quantified. Maine's microbiology laboratories (37 clinical labs and 2 reference labs) strengths included the following:

1. 95 % had disaster plans,
2. 92 % adhered to Biosafety Level 2 practices[10],
3. 77% utilized Biosafety cabinets and the same percentage make use of engineering safety controls to prevent aerosol production, and
4. 89% of labs had training rooms available.

Additionally, 87% of the labs were willing to host training and invite regional hospitals to attend. Computer access with CD ROM and access to the Internet was available in 95% of the laboratories, video conferencing in 82% and dedicated fax lines in 92%. 77% were able to perform routine microbiological testing (from all anatomical sites) and 85% of the labs antimicrobial testing. 95% of the labs knew Health and Environmental Testing Laboratory notification was required if potential bioterrorism agents were suspected and 79% of the labs could produce copies of federal guidelines for packaging and shipping specimens. Laboratory areas in need of improvement include the following:

1. Only 33% of the labs used negative air pressure,
2. Only 16% of the laboratorians with microbiological training worked exclusively in the Microbiology sector,

[10] http://www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4s3.htm

3. Only 41% of the lab staff were familiar with the National Laboratory Training Network,
4. Although all labs maintain a training schedule, only 23% of the labs had education coordinators on staff,
5. At best, 46% of lab staff were familiar with bioterrorism agents (e.g., anthrax), and
6. Only 38% of the labs had instituted Standard Operating Procedures (SOPs) for bioterrorism agents and only 41% of the labs were familiar with chain of custody rules.

C. *Health Alert Network Assessment and Planning Project-HAN Survey Summary*, Maine, 2003

Purpose:

- The purpose of the assessment was to better understand the current capacities of Maine Health Alert Network hospitals in five categories:
  1. Information Technology
  2. Infectious Disease Reporting,
  3. Distance Learning Education
  4. Communications Receipt
  5. Communications Broadcast

Assessment Tool:

- The assessment tool was a survey administered to each partner in a face-to-face oral interview.

Conclusions:

- The survey results indicate that Maine's hospitals have adequate infrastructure in personnel, equipment resources, processes, and procedures for a successful Health Alert Network implementation,
- Many partners are capable of reporting into the National Electronic Data Surveillance System,
- Many larger hospitals have satellite down-link capacity, however many rural hospitals do not,
- Many rural partners have no identified backup personnel for disease reporting,
- Current partner capacity indicates that all have multiple (redundant) available communication devices to receive alert notifications but none have broadcast capacity to disseminate health alerts to all, or a majority of their community partners, and
- All partners have capacity to receive some distance learning programs but rural partners have minimal access to satellite communication equipment and program distribution.

Hospitals must be able to exchange information beyond fax and email. The ability to send and receive information within the health system requires a solid communications infrastructure. High-speed access to the Internet with built-in redundancy is necessary to receive health alerts especially during emergencies. In emergencies, the Bureau of Health initiates alerts to the following agencies: Portland and Bangor Public Health Offices, hospitals, Emergency Medical Services (EMS), Maine Emergency Management Agency (MEMA), and other designated state

officials. In 2003, a study to measure Maine's communication infrastructure was completed. The study encompassed 5 areas of concern:

1. Information technology,
2. Infectious disease reporting,
3. Distance learning,
4. Education, and
5. Communications receipt and broadcast.

The platform Maine is using to create communications capacity to send alerts is the Health Alert Network (HAN) system. HAN is supported by the Centers for Disease Control and Prevention (CDC) and will provide Maine's public health and health care system a communication network able to send health alerts, health advisories, and health updates to both public and private health partners. Currently, all Maine partners participating in the study have high-speed Internet access and multiple redundant communication devices able to receive alert notifications (pagers and phones).

D. *An Assessment of the Maine EMS System*, Maine, 2003

Purpose:

- The purpose of the assessment was to examine the delivery of Emergency Medical Services (EMS) services in Maine, with special emphasis on the state regional interface in delivering services.

Assessment Tool:

- The assessment comprised of regional focus groups (three) consisting of a presentation and discussion format. Topics for review included:
  1. Regulation and Policy
  2. Resource management
  3. Human Resources and Training
  4. Transportation
  5. Facilities
  6. Communications
  7. Public Information, Education and Prevention
  8. Medical Direction
  9. Trauma Systems
  10. Evaluation

Conclusions:

- The focus group results indicate that due to progressive cuts to the state EMS budget, staffing has been reduced to minimal levels. Reduced staffing has increased regional EMS reliance including assignment or adoption of tasks beyond the content of law and rules,
- EMS should develop a statewide communications plan including policy and procedures,
- EMS should develop an electronic data collection and reporting system that would include a trauma registry that is integrated into other public safety systems,
- EMS personnel should increase utilization of the video-conferencing network to facilitate comprehensive training at the statewide level,

- EMS criteria should be developed for a stated response goal, marine EMS transport, and pre-hospital treatment protocols, and
- EMS should develop an integrated EMS public information, education and relations program.

Maine is a large state and emergencies may require patients to be transported long distances to an acute care or a trauma hospital. The agency in Maine with transport responsibility is Emergency Medical Services (EMS). In 2003, a study was undertaken to assess the EMS system's ability to provide emergency services. The results indicate a system that is underfunded and understaffed. EMS is a health care safety net provider in many areas of the State. The demand for this service is increasing while reductions in payments for ambulance transportation are experienced.

E. *State Homeland Security Strategy, State of Maine* (Maine Emergency Management Agency), Maine, 2003

Purpose:

- The purpose of the assessment was to identify a strategic direction for enhancing regional capability and capacity to prevent and reduce the vulnerability of Maine citizens from weapons of mass destruction or terrorism incidents.

Assessment Tool:

- The evaluation tool was a comprehensive risk, capabilities, and needs assessment. Maine Emergency Management Agency staff presented an assessment overview at regional sessions in each of the 21 State-defined Jurisdictions.

Conclusions:

- The results indicate many of the agencies within Maine are too small to have resources necessary to respond to many emergencies, especially a weapon of mass destruction terrorism incident. The agencies rely on larger organizations to provide resources through mutual aid and inter-agency agreements,
- A strategy should be developed to assess current coverage of mutual aid and inter-agency agreements to encourage those with hazardous material and decontamination capabilities to expand their current areas of coverage,
- Emergency planners will continue to stress the importance of an all-hazards approach to weapons of mass destruction, terrorism preparedness and response,
- Maine Emergency Management Agency will continue ongoing efforts to enhance capabilities through planning, training, and exercises that include all first responder disciplines.

Maine Emergency Management Agency (MEMA) provides oversight for emergency planning and response in Maine. In 2003, MEMA conducted a study to identify a strategy to enhance regional capacity to prevent, respond and to recover from weapons of mass destruction (WMD) or other acts of terrorism. The Governor has designated MEMA as the primary coordinator of Homeland Security activities and the clearinghouse of information between all federal, state, and local agencies in Maine. As many of Maine agencies lack sufficient resources to respond to emergencies, the ability to respond to a WMD act is highly unlikely without outside help. In order to acquire outside aid, mutual aid agreements and inter-agency aid agreements must be in

place. Developing and expanding current agreements is a high priority of MEMA's Homeland Security Strategy.

F. *County-Based Health System Emergency Preparedness Assessment,* Maine, 2002

Purpose:

- The purpose of the assessment was to identify resources, needs and barriers that affect preparedness capacity in each Maine County, and
- To elicit ideas for improving public health emergency preparedness statewide.

Assessment Tool:

- The assessment tool consisted of site visits made to all County Emergency Management Offices to interview each County Emergency Management Director,
- To meet with cross-disciplinary and cross-agency groups of stakeholders within each Maine County, and
- To follow up a previously administered survey, the Public Health Performance Assessment Instrument for Emergency Preparedness (Bureau of Health originally distributed in 2000 to County Emergency Management Directors).

Conclusions:

The results suggested that a regional approach would provide the most effective system to develop a comprehensive and coordinated health systems emergency response plan in Maine. Also, a wide range of stakeholders would most likely accept this approach.

Further, training, communication, and leadership were identified as primary needs:

- Training should be delivered that is accessible and available to both first responders and the medical community,
- To improve communication processes between the state agencies and local and county entities to increase coordination between local organizations such as the medical community and first responders, and
- To improve capacity to respond to public health emergencies by increasing human resources in areas such as law enforcement, health care, and first responders.

MEMA funds County agencies to develop emergency response plans and provide a conduit to fund and reimburse local communities for emergency planning activities and disaster expenses. Maine's 16 Counties each have an Emergency Management Agency (EMA) Director. In 2002, the EMA Directors were asked to identify resources, needs and barriers pertaining to emergency preparedness capacity and to propose ideas to improve public health emergency preparedness. The highest identified needs were communication equipment or processes, training or funds for training, and coordinated state level leadership. The EMA Directors stressed the need for a secure, interoperable, networked, and redundant communication system as the highest requirement. Specifically, the lack of repeaters and 2-way hand-held radios were cited. Directors supported communication upgrades and integrating current communication networks. The study identified training topics, recipients and methods to deliver training. Hospital staff, primary care providers either at clinics or private practice, school health nurses, first responders and public safety were identified as needing training. Training topics included Incident Command System, communication, basic infectious disease recognition and treatment, mass vaccination, and mass pharmaceutical distribution and dispensing. Training delivery issues

include: recognizing many trainees already wear several hats and are not able (or unwilling) to travel to training sessions because they are not paid for the time. Leadership issues involved clear delineation of roles and responsibilities, consistent coordinated messages from lead agencies (MEMA, Bureau of Health, Maine Hospital Association and the Governor's Homeland Security Task Force), and effective inter-agency communication. The study also called for the Bureau of Health to create a regional public health infrastructure and to provide guidelines pertaining to public health emergency resource allocation to the Directors.

G. *Special Populations Risk Communication Assessment,* Maine, 2003

Purpose:

- The purpose of the survey was to gather contact and service provider information from Maine facilities and agencies serving special populations.

Assessment Tool:

- The assessment tool comprised of 840 surveys mailed to each agency serving special populations in all 16 counties.

Conclusions:

The survey resulted in creation of a database that provides:

- 24 hour contact information for each facility and agency that responded to the survey,
- Mailing addresses for facilities and agencies that did not respond to the survey,
- Information on populations served by each facility or agency (e.g. visual or hearing impaired, elderly, mentally retarded, mentally handicapped, physically disabled, and those with limited English proficiency),
- Operating hours and days of each organization, and
- Information on what facilities and agencies would/could do should there be a bioterrorism event (e.g. translate materials, provide information to visitors, send information via mailing lists etc.).

The ability to disseminate emergency information to special populations in Maine was the subject of a further study. Special populations include deaf and hard of hearing, visually impaired, mentally and physically disabled, non-English speaking, elderly, isolated, and institutionalized. Television, radio, and newspaper are traditional media, and may not always available to these groups. The Internet is another form of communication that may or may not be available to a special population. The purpose if this study was to establish a database of agency contact names and phone numbers that serve special populations. Once identified, these agencies can relay emergency information in appropriate formats and mechanisms to their population.

Survey Findings: Assessment of Maine's Health System Capacity for Public Health Emergency Response, Maine 2004

Purpose:

The purpose of the survey was to identify regional health system needs and planning gaps related to:

- Hospital bed capacity for both adults and children (routine and critical care),
- Capacity for isolation and referral of patients with communicable infections,
- Appropriate staffing to manage the short-or long-term surge of patients,
- Appropriate staffing needed for functions related to the Strategic National Stockpile and the Maine Pharmaceutical Cache,
- Decontamination and personal protective equipment,
- Capacity for trauma and burn care,
- Capacity for behavioral health and substance abuse care, and
- Redundant communications infrastructure (radio network)

Assessment Tool:

- The assessment survey was a web-based survey sent to 1,320 identified health agencies in Maine.

Conclusions:

- The survey results indicate Maine lacks a system to coordinate facility emergency response plans, equipment, and resources, during patient surges, and
- In particular the following areas surfaced as needs: decontamination and personal protective equipment, radio equipment, isolation equipment, predeployed pharmaceuticals, and a system for deploying and receiving healthcare personnel.

IV. Maine's Health System Preparedness: Comparison to National Standards

Analysis of Findings:

Data from the survey, *Survey Findings: Assessment of Health System Capacity for Public Health Emergency Preparedness* (2004) concerning key areas of hospital health system capacity for response to public health emergencies were analyzed utilizing federally established Critical Benchmarks and Minimum Levels of Readiness. The U.S. Department of Health and Human Services, Health Resources and Services Administration has established the Critical Benchmarks and Minimum Levels of Readiness for states to measure ten priority areas for readiness against established standards as part of the National Hospital Bioterrorism Preparedness Program. The ten areas are:

1. Bed Capacity (system to triage, treat and stabilize a measured surge in patients)
2. Isolation Capacity (system to isolate a measured surge of infectious patients)
3. Health Care Personnel (system to deploy personnel to support patient surge)
4. Health Care Personnel (system for advanced registration and credentialing of personnel)
5. Pharmaceutical Caches (system to protect personnel and community)
6. Personal Protection Equipment (system to provide adequate protection to personnel)

7. Decontamination (system to decontaminate patients and personnel)
8. Behavioral Health (system to train professionals and treat patients)
9. Trauma and Burn (system to treat measured surge in trauma and burn patients)
10. Communications and Information Technology (establish communications system)

The tables 1 through 10 are formatted with the following columns: *Standard*, and *Analysis of Findings*. The *Standard* column states the federal Critical Benchmark or Minimum Level of Readiness to be measured and the *Analysis of Findings* summarizes whether Maine meets the *Standard*. Both statewide and regional information is provided in the *Analysis of Findings.* Explanatory notes are included to provide additional supportive information. Tables 1, 3, 6, and 7 have worksheets contain statewide and regional data for comparison purposes.

Analysis of Findings:

Table 1. Surge Capacity – Beds, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark #2 - 1 Establish a system that allows the triage, treatment and initial stabilization of 500 adult and pediatric patients per 1,000,000 awardee jurisdiction (1:2000), above the current daily staffed bed capacity With acute illness or trauma requiring hospitalization from a chemical, biological, radiological, nuclear or explosive (CBRNE) incident.	**Maine does not meet the Critical Benchmark** Maine does not meet the bed capacity standard statewide. However, the Eastern and the Central Regions do meet the benchmark. In the final statewide analysis, Maine lacks bed capacity and health care agencies do not have the systems in place (plans, protocols and procedures) to triage, treat and stabilize the required number of patients. Statewide, Maine's health care agencies must be able to surge 638 beds above the current daily-staffed bed capacity to meet the Benchmark.	The table below provides Maine's hospitals surge bed capacity benchmark and actual surge beds both statewide and regionally. See details in Appendix A Table 2 and map of licensed beds Appendix E.
Minimum Level of Readiness Awardee will have systems in place that allow the triage, treatment and initial stabilization of 500 adult and pediatric patients per 1,000,000 awardee jurisdiction (1:2000), above the current daily bed capacity, for victims of a chemical, biological, radiological, nuclear or explosive (CBRNE) incident.	**Maine partially meets the Minimum Level of Readiness** Maine does meet the bed capacity Minimum Level of Readiness in two regions. However, Maine health care agencies do not have the systems in place (plans, protocols and procedures) to triage, treat and stabilize the required number of patients.	

Awardee	Population	HRSA Surge Bed Benchmark (1:2000)	Maine's Surge Bed Capacity[11]
Maine Statewide	1,276,978	638	585
Central Region	344,718	172	180
Eastern Region	438,761	219	236
Southern Region	493,499	247	169

[11] Surge bed capacity is defined by Health Resources and Services Administration (HRSA) as licensed beds minus staffed beds

Analysis of Findings:

Table 2. Surge Capacity – Isolation, Maine, 2004,

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark #2 - 2 Ensure that all participating hospitals have the capacity to maintain, in negative pressure isolation, at least one suspected case of a highly infectious disease (e.g., small pox, pneumonic plague, SARS, Influenza and hemorrhagic fevers) or for any febrile patient with a suspect rash or other symptoms of concern who might possibly be developing a potentially highly communicable disease.	**Maine does not meet the Critical Benchmark.** 31 of the 39 (79.5%) Maine hospitals (including psychiatric hospitals) reported having the capacity to maintain negative pressure for at least one patient	See hospital negative pressure isolation details in Appendix A Table 28, 28A and the map of negative pressure beds/rooms in Appendix F
Minimum Level of Readiness Seventy-five percent of participating hospitals have the capacity to maintain at least one suspect highly infectious disease case in negative pressure isolation.	**Maine currently meets the Minimum Level of Readiness Statewide**. Maine does not meet the MLR in all regions. Only 2 of the 3 Regions meet this Minimum Level of Readiness. (80%) 16 of 20 hospitals in the Eastern Region (80%) 8 of 10 hospitals in the Southern Region (66.7%) 6 of 9 hospitals in the Central Region	See regional negative pressure bed details in Appendix A Table 28, 28A and map of negative pressure beds/rooms in Maine Appendix F

Analysis of Findings:

Table 2. Surge Capacity - Isolation, Maine, 2004 (Cont)

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark #2 - 2 In addition, the awardee must identify at least one regional healthcare facility in each awardee hospital preparedness region as defined by the awardee's FY 2003 work plan that is able to support the initial evaluation and treatment of at least 10 adult and pediatric patients at a time in negative pressure isolation.	**Maine currently meets the Critical Benchmark**[12] • Central Region has 2 hospitals that meet this Critical Benchmark. • Eastern Region has 2 hospitals that meet this Critical Benchmark (Penobscot County and Aroostook County). • Southern Region has 2 hospitals that meet this benchmark. Identified hospitals in the Southern and Eastern Regions are in close proximity to Maine's 2 largest airports, seaports, Interstate highway, and rail service.	
Minimum Level of Readiness Seventy-five percent of awardee regions will have identified and upgraded (if needed) regional healthcare facilities that can support the initial evaluation and treatment of at least 10 adult and pediatric patients at a time in negative pressure isolation.	**Maine currently meets the Minimum Level of Readiness regionally**[12] Each Region has 2 hospitals that meet this Minimum Level of Readiness	

[12] See hospital negative pressure isolation details in Appendix A Table 28, 28Aand map of negative pressure beds/rooms in Maine Appendix F

Analysis of Findings:

Table 3. Surge Capacity - Health Care Personnel, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark # 2 – 3 Establish a response system that allows the immediate deployment of additional health care personnel in support of surge bed capacity noted in CBM # 2-1 The number of health care personnel must be linked to already established patient care ratios noted by the awardee's Patient Care Practice Acts based on 24-hour operations. `This benchmark must describe how these personnel are recruited, received, processed and managed through the incident in accordance with the awardee system noted in CBM # 2-1.	**Maine does not meet the Critical Benchmark** Based on survey data[13], Maine's hospitals lack additional health care personnel to staff 638 beds (CBM #2-1) and a system to recruit, receive, process, and manage personnel. In accordance with the Concepts of Operations for the Acute Care Center (Skidmore, 2003) 162 medical staff are required per "12 hour shift" for a statewide surge of 638 beds. A 24/7 operation requires 670 personnel (a 1:4 ratio which is preferred), 447 personnel are needed for a minimum 1:6 ratio.	Maine health care emergency providers are meeting every other month with the Northern New England Emergency Medical Response Team. Maine, New Hampshire, and Vermont are participating in planning sessions to develop state medical strike teams for deployment of specialized medical teams during mass casualty events. Teams are voluntary and augment health care professionals within their state. The Northern New England Emergency Medical Response Team is part of a collaborative effort to address deployment and credentialing issues of health care personnel in the northern New England region.

[13] See Surge Capacity (50 patient surge) Appendix A Table 9A

Analysis of Findings:

Table 3. Surge Capacity - Health Care Personnel, Maine, 2004 (Cont)

STANDARD	ANALYSIS OF FINDINGS	NOTES
Minimum Level of Readiness Awardees will have a response system that allows the immediate deployment of additional patient care personnel in support of surge bed capacity.	**Maine does not meet the Minimum Level of Readiness** Maine does not have a system to deploy additional personnel. However, based on survey data, Maine hospitals reported the number of days they are able to provide staff to sustain a 50 patient surge at their institution as follows[14]: • No days – 11 hospitals • 1 day – 9 hospitals • 2 days – 2 hospital • 3 days – 1 hospital • More than 3 days – 3 hospitals	To calculate the number of Health Care Personnel for surge capacity: According to the publication; *Concepts of Operations for the Acute Care Center*, this is defined as: " Twelve (12) is the minimum number of staff providing direct patient care on a 50-bed nursing subunit per 12-hour shift, which includes the physician, the physician extenders, nurses, and nursing assistants." This effectively gives a healthcare provider to patient ratio of 1:4. In order to provide staffing for 24 hours a day for 7 days a week the following information must be considered: (e.g., 168 hours in a week/40 hours for FTE=4.2 FTEs - each position requires 4.2 FTEs for 24/7 operations) (1:4): 638 beds/4 = 160 providers (1:6): 638 beds/6 = 106 providers 160 x 4.2 FTEs = 670 health care personnel needed for 1:4 ratio A 1:6 ratio may be necessary in mass casualty emergencies. If so, then 106 x 4.2 FTEs = 447 health care personnel needed. The table below provides patient care personnel needs at the statewide and regional levels.

Awardee	Population	Bed Benchmark (1:2000)	Health Care Personnel (1:4)	Health Care Personnel (1:6)
Maine Statewide	1,276,978	638	670	447
Central Region	344,718	172	181	121
Eastern Region	438,761	219	230	154
Southern Region	493,499	247	259	173

[14] See Surge Capacity (50 patient surge) Appendix A Table 9A

Analysis of Findings:

Table 4. Surge Capacity – Advance Registration System, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark # 2 - 4 Develop a system that allows for the advance registration and credentialing of clinicians needed to augment a hospital or other medical facility to meet patient/victim care increased surge capacity needs.	**Maine does not meet the Critical Benchmark** Maine currently lacks a registration and credentialing system.	
Minimum Level of Readiness Awardees will have established a plan for their State-based systems that allow qualified competent and licensed health care professionals to work in an emergency situation throughout the awardee jurisdiction.	**Maine does meet the Minimum Level of Readiness** Maine's plan is currently underway through piloting a Nurse Volunteer Corps. Maine's health care system is scheduled to implement the Emergency System of Advanced Registration of Volunteer Health Professionals (ESAR-VHP) beginning January 2006. HRSA is in the process of developing guidelines for the ESAR-VHP Program[15].	

[15] Department of Health and Human Services, Health Resources and Services Administration. *Technical and Policy Guidelines, Standards and Definitions* for the Emergency System for Advanced Registration of Volunteer Health Professionals (ESAR-VHP) Program

Analysis of Findings:

Table 5. Surge Capacity - Pharmaceutical Caches, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark # 2 – 5 Establish regional plans that insure a sufficient supply of pharmaceuticals to provide prophylaxis for 3 days to hospital personnel (medical and ancillary staff), emergency first responders and their families as well as for the general community—in the wake of a terrorist-induced outbreak of anthrax or other disease for which such countermeasures are appropriate.	**Maine does not meet the Critical Benchmark** As part of the Maine Hospital Pharmaceutical Stockpile (MHPS), 31,500 doses of Doxycycline are distributed at hospitals statewide. This is inadequate to provide prophylaxis for 64,530 (387,180 doses) needed to treat hospital staff, first responders and families. (Endnote Critical Benchmark #2 – 5 pg. 48) Maine would require at least 6 million tablets of Doxycycline to meet this Benchmark (3 day supply of 2 tablets per day costing 5 cents per tablet at a cost of $300,000 or 30 cents per person). Maine does not have plans or protocols for hospital personnel, emergency responders, and their immediate families to receive prophylaxis within 12 hours of a disaster being declared.	Endnote, on page 48, contains additional prophylaxis information regarding hospital personnel, emergency first responders, and families. Appendix G displays a map of the Maine Hospital Pharmaceutical Stockpile Doxycycline placements
Minimum Level of Readiness 1. Seventy-five percent of participating hospitals will have pharmaceutical caches sufficient to cover hospital personnel (medical and ancillary), emergency first responders and family members associated with their facilities for a 72 hour time period. 2. Fifty percent of awardees will have established community wide prophylaxis plans that are compatible with other existing state immunization or prophylaxis plans.	**Maine partially meets the Minimum Level of Readiness** 1. Maine currently lacks sufficient pharmaceutical caches to meet this MLR 2. Maine Strategic National Stockpile Plan (SNS) meets this MLR	

Analysis of Findings:

Table 6. Surge Capacity - Personal Protection Equipment, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark #2 - 6 Each awardee must ensure adequate personal protective equipment (PPE) per awardee defined region, to protect current and additional health care personnel, during a chemical, biological, radiological or nuclear incident. This benchmark is tied directly to the number of health care personnel the awardee must provide (CBM # 2-3) to support surge capacity for beds (CBM # 2-1).	**Maine does not meet the Critical Benchmark** Maine's hospitals must be able to surge to 638 beds (CBM #2-1) and requires 670 additional medical staff (CBM # 2-3) to meet this surge. Maine Emergency Management Agency (MEMA) purchased 6 PPE kits for each Maine hospital. This is inadequate to meet Maine's current and additional health care personnel needs (6 x 40 = 240). An additional 720 suits and 240 Powered Air Purifier Respirator (PAPRS) are needed statewide to meet this Benchmark.	As of December 16, 2004; 262 hospital staff have received Hazmat for hospital training from the Maine Emergency Management Agency. The training meets OSHA 1910.120 standards for hospital hazardous materials and decontamination at the operations level and produced Train the Trainer classes to sustain the program. The table below provides current PPE at Maine hospitals and additional PPE suits and PAPRS needed to meet the Critical Benchmark (estimates for additional suits and PAPRS provided by Maine Emergency Management Agency Hospital Hazardous Materials Trainer) Appendix H contains a breakdown of PPE equipment purchased for Maine hospitals.

Awardee	Additional Health Care Personnel Needed (CBM # 2-3)	Number of Hospitals	PPE Kits per Region (Hospital x 6)	Total Number of Additional PPE Needed
Statewide	670	40	240	720 Suits and 240 PAPRS
Central Region	181	9	54	162 Suits and 54 PAPRS
Eastern Region	231	21	126	378 Suits and 126 PAPRS
Southern Region	260	10	60	180 Suits and 60 PAPRS

Analysis of Findings:

Table 7. Surge Capacity – Decontamination, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark #2 - 7 Ensure that adequate portable or fixed decontamination systems exist for managing adult and pediatric patients as well as health care personnel who have been exposed in a chemical, biological, radiological, nuclear, or explosive incident in accordance with the numbers associated with CBM # 2-1 & # 2-3. All decontamination assets must be based on how many patients/providers can be decontaminated on an hourly basis. The awardee should plan to be able to decontaminate all patients and providers within 3 hours from the onset of the event This effectively gives a healthcare provider to patient ratio of 1:4, which should be based directly again on the number of beds required in CBM #2-1.	**Maine currently meets the Critical Benchmark** Maine's hospitals must be able to surge to 638 beds (CBM #2-1) and requires 670 medical staff (CBM # 2-3) to meet this surge. Maine Emergency Management Agency has purchased 40 decontamination tents - 1 tent for all but one of Maine's hospital (Appendix G). Maine has additional decontamination capacity in hazmat teams and other trained responders: • Maine Department of Environmental Protection o 4 teams - 26 WMD Technician Level Trained Members • Hazmat Teams – Regional Response Team o 12 teams Trained at Technician Level • Strike Teams o 8 teams Trained at Operations Level • Civil Support Team o National Guard WMD Trained Team	Note: Staffing can span from a minimum of each hospital having a 2-person decontamination team to operate the equipment, to metropolitan hospitals requiring a 4-person team and up to a 6-member team. Each tent has the capability to decontaminate up to 18 patients per hour (conservative estimates of 10 minutes per person in a tent containing 3 decontamination lines) and therefore could theoretically decontaminate >50 patients within 3 hours[16]. Non-ambulatory patients may require up to a 5-person team to decontaminate (1 sending, 1 receiving, 2 inside, and a safety officer[17]). Decontamination of ambulatory patients may not require 2 staff in the tent. The table below provides Maine's PPE suits and PAPRS needed to meet decontamination Critical Benchmark.

Awardee	Population	Bed Benchmark (1:2000)	Decontamination Team Numbers:	PPE Sets Required:	Decontamination: Patients/hr (Beds + Providers/3 hrs)
Maine	1,276,978	638	2, 4, or 6	24 suits and 12 PAPRS	>50 per tent
Central Region	344,718	172	2, 4, or 6	24 suits and 12 PAPRS	>50 per tent
Eastern Region	438,761	219	2, 4, or 6	24 suits and 12 PAPRS	>50 per tent
Southern Region	493,499	247	2, 4, or 6	24 suits and 12 PAPRS	>50 per tent

[16] Worse case scenario involves a decontamination team member in full sun limited to 15 minutes maximum in gear – 18 year old in good health.
[17] Safety Officer monitors scene safety and the health and safety of the decontamination team

Analysis of Findings:

Table 7A. Surge Capacity – Decontamination/Personal Protection Equipment, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Minimum Level of Readiness 1. Awardees will possess sufficient numbers of Personal Protective Equipment (PPE) to protect both the current and additional healthcare personnel expected to be deployed in support of a Bio-terrorism event. 2. Awardees will possess contingency plans to establish sufficient numbers of PPE to protect both the current and additional health care personnel expected to be deployed in support of a chemical and radiological event. 3. Awardees will possess sufficient numbers of fixed and/or portable decontamination facilities for managing adult and pediatric victims as well as health care personnel, who have been exposed during a chemical, radiological, nuclear or biological incident.	**Maine partially meets the Minimum Levels of Readiness** 1. Maine does not have sufficient PPE to protect all current and additional health care personnel. 2. Maine does not have contingency plans to meet the PPE needs for current and additional healthcare personnel. 3. Maine currently meets this Minimum Level of Readiness for fixed and/or portable decontamination facilities.	

Analysis of Findings:

Table 8. Surge Capacity – Behavioral (Psychosocial) Health, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark #2 - 8 Enhance the networking capacity and training of health care professionals to be able to recognize, treat and coordinate care related to the behavioral health consequences of bioterrorism or other public health emergencies	**Maine does not meet the Critical Benchmark** Bureau of Health's *Survey for Regional Health System Emergency Response Planning* (Appendix A) Tables 64 – 65 indicate the following: • Low levels of outreach and counseling staff • Low levels of written emotional, mental health or substance abuse plans • Low levels of agreements with other agencies for counseling • Table 65 does indicate 1,196 trained staff available for outreach and counseling. However, only 566 licensed for outreach and counseling. The Maine Department of Health and Human Services Behavioral Services and the Office of Substance Abuse is developing a Behavioral Health Disaster Response Plan. The plan will meet the behavioral health needs in emergencies. Maine's Training Plan for Bioterrorism and Public Health Emergency Preparedness and Response lists "key hospital staff" and "identified primary care providers" to receive training to recognize behavioral health consequences.	Maine's training plan includes behavioral health competency training (Maine Center for Public Health). *Maine's Training Plan* available at: http://www.maine.gov/dhhs/boh/ophep/ophepdocuments.htm
Minimum Level of Readiness Awardees will identify the minimum behavioral health training competencies for health care professionals responding to bioterrorism or other public health emergencies	**Maine does meet this Minimum Level of Readiness** Maine has established minimum behavioral health training competencies for health care professionals.	The "Draft" *Statement of Understanding between the Maine Department of Health and Human Services and the American Red Cross* (Appendix I).

Analysis of Findings:

Table 9. Surge Capacity - Trauma And Burn Care, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark #2 - 9 Enhance statewide trauma and burn care capacity to be able to respond to a mass casualty incident due to terrorism. This plan should ensure the capability of providing trauma care to at least 50 severely injured adult and pediatric patients per million of population	**Maine currently meets the Critical Benchmark** The State Trauma Advisory Committee is currently updating the Maine Emergency Medical Services (EMS) Trauma System Plan. Using the criteria 50/million to estimate trauma capacity needs: • Maine must provide trauma care to 65 severely injured adult and pediatric patients • Regions must provide trauma care to: o 23 patients Southern o 20 patients Central o 22 patients Eastern	The "Draft" *Maine Emergency Medical Services (EMS) Trauma System Plan* (2004)[18] includes every injury-treating hospital in the State as a participant in the Trauma System Plan. Since all Maine hospitals are part of the Trauma System Hospitals, either as a Regional Trauma Center or as a Trauma Direction and Care Hospital, Maine's 36 hospitals are capable of providing trauma care to 65 patients to meet this Benchmark.
Minimum Level of Readiness Awardees will have the capability of providing trauma and burn care to at least 50 severely injured adult and pediatric patients per million of population due to a mass casualty incident due to terrorism	Same as Benchmark	

[18] EMSSTAR Group LLC (2004). *An Assessment of the Maine EMS System*

Analysis of Findings:

Table 10. Communications And Information Technology, Maine, 2004

STANDARD	ANALYSIS OF FINDINGS	NOTES
Critical Benchmark #2 - 10 Establish a secure and redundant communications system that ensures connectivity during a terrorist incident or other public health emergency between health care facilities and state and local health departments, emergency medical services, emergency management agencies, public safety agencies, neighboring jurisdictions and federal public health officials.	**Maine does not meet the Critical Benchmark** Maine is currently developing a new, web-based Health Alert Network (HAN) which provides healthcare facilities with secure, redundant communication through 5 means: email, fax, pager, voicemail and website[19] Hospitals reported in the Bureau of Health's *Survey for Regional Health System Emergency Response Planning* the following (Appendix A Tables 74 & 74A): 8% have satellite phones 23% have APCO 25 radios Regionally: Central: 0% satellite phones & 11% radios Eastern: 5% satellite phones & 25% radios Southern: 20% satellite phones & 30%radios Maine lacks adequate secure and redundant, interoperable communication statewide to meet the Benchmark.	In August of 2004, the Maine Emergency Management Agency (MEMA) issued a draft endorsement of the APCO 25 project. APCO 25 interoperable radio system ensures technical compatibility among users (Appendix J).
Minimum Level of Readiness Awardees will have a secure and redundant communications system that allows connectivity among all agencies and healthcare entities responding to a terrorist event or other public health emergency.	Same as benchmark	

[19] Maine Health Research Institute, University of Maine at Farmington (2003). *Health Alert Network Assessment & Planning Project HAN Survey Summary*

Maine's Health System Preparedness: Comparison to National Standards (continued)

Action Steps and Timetable:

Tables 11 through 20 contain the following columns: *Standard*, *Actions* and *Timetable* to complete standard. The *Standard* column states the federal Critical Benchmark or Minimum Level of Readiness to be measured and the *Actions* column details the steps necessary to meet the Minimum Level of Readiness or the Critical Benchmark. Lastly, the *Timetable* identifies the quarter the *Action* steps are scheduled to be completed.

Action Steps and Timetable:

Table 11. Surge Capacity – Beds, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark #2 – 1 Establish a system that allows the triage, treatment and initial stabilization of 500 adult and pediatric patients per 1,000,000 awardee jurisdiction (1:2000), above the current daily staffed bed capacity With acute illness or trauma requiring hospitalization from a chemical, biological, radiological, nuclear or explosive (CBRNE) incident.	Locate additional bed capacity in the southern region of the State. Develop coordinated regional and statewide system (hospital plans, protocols and procedures) to triage, treat, stabilize and transfer patients regionally and statewide. Implement through inter-agency Memoranda of Understanding (MOU).	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05
Minimum Level of Readiness Awardee will have systems in place that allow the triage, treatment and initial stabilization of 500 adult and pediatric patients per 1,000,000 awardee jurisdiction (1:2000), above the current daily bed capacity, for victims of a chemical, biological, radiological, nuclear or explosive (CBRNE) incident.	As above.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 12. Surge Capacity – Isolation, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark #2 - 2 Ensure that all participating hospitals have the capacity to maintain, in negative pressure isolation, at least one suspected case of a highly infectious disease (e.g., small pox, pneumonic plague, SARS, Influenza and hemorrhagic fevers) or for any febrile patient with a suspect rash or other symptoms of concern who might possibly be developing a potentially highly communicable disease.	Maine hospitals will develop capacity through purchase and placement of portable negative pressure equipment in hospitals without current capacity to meet this benchmark and develop plans and protocols for patient transfer.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05
Minimum Level of Readiness Seventy-five percent of participating hospitals have the capacity to maintain at least one suspect highly infectious disease case in negative pressure isolation.	The Central Region will increase capacity through portable negative pressure equipment purchases and place at hospitals lacking Minimum Level of Readiness capacity.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 12. Surge Capacity – Isolation, Maine, 2004 (Cont)

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark #2 - 2 In addition, the awardee must identify at least one regional healthcare facility in each awardee hospital preparedness region as defined by the awardee's FY 2003 work plan that is able to support the initial evaluation and treatment of at least 10 adult and pediatric patients at a time in negative pressure isolation.	Hospitals to develop protocols and procedures for inter-hospital patient transfer.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05
Minimum Level of Readiness Seventy-five percent of awardee regions will have identified and upgraded (if needed) regional healthcare facilities that can support the initial evaluation and treatment of at least 10 adult and pediatric patients at a time in negative pressure isolation.		**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 13. Surge Capacity - Health Care Personnel, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark # 2 - 3 Establish a response system that allows the immediate deployment of additional health care personnel in support of surge bed capacity noted in CBM # 2-1 The number of health care personnel must be linked to already established patient care ratios noted by the awardee's Patient Care Practice Acts based on 24-hour operations. This benchmark must describe how these personnel are recruited, received, processed and managed through the incident in accordance with the awardee system noted in CBM # 2-1.	Maine hospitals and health agencies will develop staffing plans for surge needs through affiliated intra hospital systems and existing local health agencies. Mutual aid agreements supporting health care personnel deployment between health agencies and systems will be developed. Emergency health care providers in Maine are part of the Northern New England Emergency Medical Response Team (NNE EMRT) currently developing a regional and state medical strike team.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05
Minimum Level of Readiness Awardees will have a response system that allows the immediate deployment of additional patient care personnel in support of surge bed capacity.	As above.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 14. Surge Capacity – Advance Registration System, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark # 2 - 4 Develop a system that allows for the advance registration and credentialing of clinicians needed to augment a hospital or other medical facility to meet patient/victim care increased surge capacity needs.	Maine's health care providers will participate in the Phase III of the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR VHP) by June 30, 2006. Hospitals will develop advanced licensing and credentialing protocols within their existing hospital systems. Further, Maine Bureau of Health is developing a nurse disaster volunteer registry through the Office of Public Health Emergency Preparedness and the Maine Board of Nursing	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☐ Second Quarter 05
Minimum Level of Readiness Awardees will have established a plan for their State-based systems that allow qualified competent and licensed health care professionals to work in an emergency situation throughout the awardee jurisdiction.	Maine Bureau of Health will expand the Nurse Volunteer Corps to other trained medical and allied health professionals by the March 2006. Maine will work with the licensing boards to identify potential databases of healthcare workers to develop a registration system.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 15. Surge Capacity - Pharmaceutical Caches, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark # 2 – 5 Establish regional plans that insure a sufficient supply of pharmaceuticals to provide prophylaxis for 3 days to hospital personnel (medical and ancillary staff), emergency first responders and their families as well as for the general community—in the wake of a terrorist-induced outbreak of anthrax or other disease for which such countermeasures are appropriate.	Develop Medical Emergency Distribution System (MEDS) of Maine to strategically place pharmaceuticals (antidotes and antibiotics) in Maine. Develop plans and procedures for MEDS Program and define pharmaceutical cache formularies and protocols for both adult and pediatric treatments (within generally accepted clinical recommendations) and selected sites for deployment. Explore establishing pharmaceutical cache for Northern New England Emergency Medical Response Team or pharmacy-based surge caches within stock rotational capacity of participating pharmacies.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05
Minimum Level of Readiness 1. Seventy-five percent of participating hospitals will have pharmaceutical caches sufficient to cover hospital personnel (medical and ancillary), emergency first responders and family members associated with their facilities for a 72 hour time period 2. Fifty percent of awardees will have established community wide prophylaxis plans that are compatible with other existing state immunization or prophylaxis plans.	1. Explore community resources (hospitals, private pharmacies) to determine existing supplies of Doxycycline, the initial cost, shelf life and feasibility of rotating stock to meet this MLR. 2. Integrate regional plans into Strategic National Stockpile Plan	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 16. Surge Capacity - Personal Protection Equipment, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark #2 - 6 Each awardee must ensure adequate personal protective equipment (PPE) per awardee defined region, to protect current and additional health care personnel, during a chemical, biological, radiological or nuclear incident. This benchmark is tied directly to the number of health care personnel the awardee must provide (CBM # 2-3) to support surge capacity for beds (CBM # 2-1).	The Regional Resource Centers will purchase additional PPE to meet hospital personnel needs by the end of the Second Quarter of 2005. Consider regional caches of PPE to augment capacity.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 17. Surge Capacity – Decontamination, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark #2 - 7 Ensure that adequate portable or fixed decontamination systems exist for managing adult and pediatric patients as well as health care personnel who have been exposed in a chemical, biological, radiological, nuclear, or explosive incident in accordance with the numbers associated with CBM # 2-1 & # 2-3. All decontamination assets must be based on how many patients/providers can be decontaminated on an hourly basis. The awardee should plan to be able to decontaminate all patients and providers within 3 hours from the onset of the event. This effectively gives a healthcare provider to patient ratio of 1:4, which should be based directly again on the number of beds required in CBM #2-1.	Develop PPE and decontamination plans and procedures for the following: • Hospital emergency plans • County emergency plans • Regional emergency plans • Statewide emergency plan. Continue to schedule and provide sustainable OSHA 1910.120 standards decontamination training[20] at the operational level for identified health care personnel by March 1, 2006. Consider purchasing 2 additional decontamination tents for each region. Consider regional caches containing PPE (60 suits, 12 PAPRS, and 100,000 N-95 masks) and decontamination tent to augment capacity.	**Actions completed by**: ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

[20] http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9765

Action Steps and Timetable:

Table 17A. Surge Capacity – Decontamination/Personal Protection Equipment, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Minimum Level of Readiness 1. Awardees will possess sufficient numbers of Personal Protective Equipment (PPE) to protect both the current and additional healthcare personnel expected to be deployed in support of a Bio-terrorism event. 2. Awardees will possess contingency plans to establish sufficient numbers of PPE to protect both the current and additional health care personnel expected to be deployed in support of a chemical and radiological event. 3. Awardees will possess sufficient numbers of fixed and/or portable decontamination facilities for managing adult and pediatric victims as well as health care personnel, who have been exposed during a chemical, radiological, nuclear or biological incident.	1. Purchase additional PPE kits to meet the Critical Benchmark. Consider regional caches of PPE to augment capacity. 2. Develop contingency plans for additional PPE kits for current and additional health care workers. 3. Develop maintenance plan to replace equipment as needed.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 18. Surge Capacity – Behavioral (Psychosocial) Health, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark #2 - 8 Enhance the networking capacity and training of health care professionals to be able to recognize, treat and coordinate care related to the behavioral health consequences of bioterrorism or other public health emergencies	Coordinate with Maine Department of Health and Human Services Behavioral Services to develop behavioral health component for the following: • Hospital emergency plans • County emergency plans • Regional emergency plans • Statewide emergency plan.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05
Minimum Level of Readiness Awardees will identify the minimum behavioral health training competencies for health care professionals responding to bioterrorism or other public health emergencies	Continue to coordinate with Maine Department of Health and Human Services Behavioral Services on training plan development.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 19. Surge Capacity - Trauma And Burn Care, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark #2 - 9 Enhance statewide trauma and burn care capacity to be able to respond to a mass casualty incident due to terrorism. This plan should ensure the capability of providing trauma care to at least 50 severely injured adult and pediatric patients per million of population	Update the EMS Trauma Plan to provide transfer protocols for the following: • Evaluation • Stabilization • Hospital decision to receive Integrate protocols into the following: • Hospital emergency plans • County emergency plans • Regional emergency plans • Statewide emergency plan Develop medical staffing exchange policies and mutual aid agreements between hospitals. Additionally, develop plans for inter-state transfer of trauma and burn patients.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05
Minimum Level of Readiness Awardees will have the capability of providing trauma and burn care to at least 50 severely injured adult and pediatric patients per million of population due to a mass casualty incident due to terrorism	Plan to include request for assistance from Disaster Medical Assistance Teams and Northern New England Emergency Medical Response Team to provide triage to less critically injured patients.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

Action Steps and Timetable:

Table 20. Communications And Information Technology, Maine, 2004

STANDARD	ACTIONS	TIMETABLE
Critical Benchmark #2 - 10 Establish a secure and redundant communications system that ensures connectivity during a terrorist incident or other public health emergency between health care facilities and state and local health departments, emergency medical services, emergency management agencies, public safety agencies, neighboring jurisdictions and federal public health officials.	Complete implementation of HAN system[21]. Purchase APCO 25 radios for hospitals[22] Develop community and regional communication plans as part of statewide communication plan.	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05
Minimum Level of Readiness Awardees will have a secure and redundant communications system that allows connectivity among all agencies and healthcare entities responding to a terrorist event or other public health emergency.	Same as benchmark	**Actions completed by:** ☐ Third Quarter 04 ☐ Fourth Quarter 04 ☐ First Quarter 05 ☑ Second Quarter 05

[21] Maine Health Research Institute, University of Maine at Farmington (2003). *Health Alert Network Assessment & Planning Project HAN Survey Summary*
[22] Maine Emergency Management Agency *Draft Standards for State of Maine Radio Systems*, See Appendix J.

Minimum Level of Readiness Summary

A Minimum Level of Readiness represents the National Hospital Bioterrorism Preparedness Program's minimum standard of health system preparedness for States. The table below demonstrates Maine's hospitals meet five Minimum Levels of Readiness, partially meet two, and do not meet three. Of those not yet met, Bed Surge Capacity, Pharmaceutical Cache, Health Care Personnel, and Personal Protective Equipment will be met by June 30, 2005. However, the standard for Minimum Levels of Readiness for Communication and Information Technology will be partially achieved. The Minimum Level of Readiness can be met through the purchase of interoperable APCO 25 compliant radios for all hospitals needing radios. The cost of purchasing a secure and redundant communications system for *all agencies and healthcare entities* prohibits meeting this Minimum Level of Readiness at this time.

Table 21. Minimum Level of Readiness Summary, Maine, 2005

HRSA Minimum Level of Readiness	Minimum Level of Readiness (MLR)		
	Meets	Partially Meets	Does Not Meet
Total	**5**	**2**	**3**
MLR # 2-1 Surge Capacity – Beds		X	
MLR # 2-2 Isolation	X		
MLR # 2-3 Health Care Personnel			X
MLR # 2-4 Credentialing	X		
MLR # 2-5 Pharmaceutical Caches		X	
MLR # 2-6 Personal Protective Equipment			X
MLR # 2-7 Decontamination	X		
MLR # 2-8 Behavioral (Psychosocial) Health	X		
MLR # 2-9 Trauma & Burn Care	X		
MLR # 2-10 Communication & Information Technology			X

Critical Benchmark Summary

Critical Benchmarks typically characterize higher levels of readiness. The table below denotes Maine's inability to meet seven of the ten Critical Benchmarks. Critical Benchmark # 2.7 is met because Maine Emergency Management Agency has purchased decontamination tents for all Maine hospitals. The Emergency Medical Services, State Trauma Advisory Committee has drafted a plan to address trauma needs in Maine and therefore Critical Benchmark # 2.9 is also met. The following Critical Benchmarks will be met by June 30, 2005: Bed Surge Capacity, Isolation Capacity, Health Care Personnel, Pharmaceutical Caches, Personal Protective Equipment, and Behavioral Health. Critical Benchmarks # 2.4 and # 2.10 (Credentialing and Communication and Information Technology) will not be met until the next grant cycle. However, progress towards meeting both Critical Benchmarks will be undertaken this year.

Table 22. Critical Benchmark Summary Table, Maine, 2005

HRSA Critical Benchmarks	Critical Benchmark (CBM)		
	Meets	Partially Meets	Does Not Meet
Total	**2**	**1**	**7**
CB # 2-1 Surge Capacity - Beds			X
CB # 2-2 Isolation		X	
CB # 2-3 Health Care Personnel			X
CB # 2-4 Credentialing			X
CB # 2-5 Pharmaceutical Caches			X
CB # 2-6 Personal Protective Equipment			X
CB # 2-7 Decontamination	X		
CB # 2-8 Behavioral (Psychosocial) Health			X
CB # 2-9 Trauma & Burn Care	X		
CB # 2-10 Communication & Information Technology			X

Training

The 2002 *Maine Hospital Assessment Survey for Emergency Preparedness* contained four questions focused on training. One item asked whether or not institutions had conducted bioterrorism education/training needs assessments of their professional staff. Other questions addressed recognition and reporting of potential bioterrorism-related diseases, access to diagnostic and treatment protocols, and mechanisms for bringing clinicians up to speed on such protocols before and during an incident. Responses to these four questions are listed in Table 23.

Table 23. Percent of Hospital Emergency Preparedness Plans That Address Training, Maine, 2004

Question	Yes	Partial	No
Total (mean)	**30%**	**24%**	**45%**
Has your institution conducted a bioterrorism education/training needs assessment of your professional staff?	8%	10%	82%
Have the laboratory and clinical personnel been trained in the recognition and reporting of rare diseases with bioterrorism potential?	36%	38%	26%
Does staff have access to diagnostic and treatment protocols addressing bioterrorism diseases and concerns?	51%	23%	26%
Have mechanisms been developed to bring clinicians up to speed on these protocols before and during an event?	23%	26%	46%

Source: ***Maine Hospital Assessment Survey for Emergency Preparedness,*** 2002

Just over half of hospitals were completely or partially prepared in terms of bioterrorism training. Over 80% of the institutions had not conducted an education/training needs assessment of their professional staff around bioterrorism. Although 51% of hospitals' staff have complete access to bioterrorism-related diagnostic and treatment protocols, less than one quarter (23%) have mechanisms completely in place for bringing their clinicians up to speed on them before and during an event.

The 2003 *County-Based Health System Emergency Preparedness Assessment* identified training as one of the primary needs expressed by the county emergency management directors interviewed for the report. The training needs identified by this study primarily focused on "providing financial incentives to trainees and delivering training that is easily accessible and available to both the first responders and medical communities." Seven counties in Maine listed training or funds to be used for training activities as a first priority need, and 12 counties in the state identified training as either a first or second priority need.

V. Recommendations

Health Resources and Services Administration (HRSA) oversees the National Hospital Bioterrorism Preparedness Program and has established measures of a State's ability to surge beyond the normal needs during emergencies. HRSA measures surge capacity in ten priority areas. Results of the *Assessment of Regional Health System Capacity for Public Health Emergency Preparedness* indicate that Maine is currently able to meet five of the Minimum Levels of Readiness but only able to meet two of the Critical Benchmarks. The focus of *Action* steps is on systems development within the following priority areas:

1. Bed Capacity (system to triage, treat and stabilize a measured surge in patients)
2. Isolation Capacity (system to isolate a measured surge of infectious patients)
3. Health Care Personnel (system to deploy personnel to support patient surge)
4. Health Care Personnel (system for advanced registration and credentialing of personnel)
5. Pharmaceutical Caches (system to protect personnel and community)
6. Personal Protection Equipment (system to provide adequate protection to personnel)
7. Decontamination (system to decontaminate patients and personnel)
8. Behavioral Health (system to train professionals and treat patients)
9. Trauma and Burn (system to treat measured surge in trauma and burn patients)
10. Communications and Information Technology (establish communications system)

The lack of systems development is the common element found throughout the HRSA surge capacity priority areas. Surge capacity requires health care and public health to identify or purchase resources and also to connect resources through comprehensive and coordinated planning at all levels of operations (local, county, regional and statewide).

Eight assessments conducted from 2002 to the present have measured components of Maine's health system infrastructure. In particular, the assessments measured health care and public health capacity to provide care both on a routine basis and during emergencies. The assessments analyzed hospital systems within the larger healthcare system. Aggregate findings of all eight assessments indicate systems development as a common problem in health care and public health systems. Therefore, systems development plays a vital role in meeting all Minimum Levels of Readiness by June 30, 2005, and also making significant progress meeting Critical Benchmarks.

The following recommendations are made:

1. **Systems Planning:**
   Connect health care, public health, and emergency management plans across disciplines and at all levels of operations by June 30, 2005.
   - Develop agency, county, regional and statewide public health emergency preparedness plans and connect to existing emergency plans.
   - Develop written agreements between agencies to share resources.
     - Equipment
     - Personnel
   - Create protocols and procedures for regional caches of supplies, pharmaceuticals and durable medical equipment.

- Develop New England wide system for sharing resources.
- Develop protocols and procedures for initial stabilization, triage, treatment and transfer of patients.

2. **Purchase Equipment and Supplies:**
   Provide health care workforce and citizens protection during public health emergencies by June 30, 2005.
   - Purchase Personal Protective Equipment (PPE) to protect health care workers.
   - Purchase equipment for hospitals to provide negative pressure isolation.
   - Purchase pharmaceuticals and durable equipment needed to protect Maine citizens.
   - Purchase interoperable secure redundant radio equipment for all hospitals, emergency medical services (EMS), and health centers following Maine Emergency Management Association *Draft Standards for State of Maine Radio Systems.*

3. **Educate and Train:**
   Establish a core workforce trained in bioterrorism and other public health emergencies by June 30, 2005
   - Following Maine's Training Plan (2003): *Bioterrorism and Public Health Emergency Preparedness and Response*; continue implementation of training for Maine's public health and healthcare workforce, providing basic capacities needed for bioterrorism and public health emergency preparedness and response.
   - Create an emergency preparedness exercise database that may be utilized by preparedness planners across Maine.
   - Promote utilization of hospital decontamination training provided by Maine Emergency Management Agency (MEMA).

The health and safety of Maine's citizens depends on the preparedness of the health care and public health workforce. As a result of Maine surveys and assessments, respondents have clearly identified the lack of capacity in the public health and health systems. Purchasing equipment is an initial step to increase capacity during patient surges. Creating a system to connect these resources through comprehensive and coordinated public health emergency plans is the next step. Finally, providing education, training, and exercising the plan through multi-disciplinary drills will result in public health and health care surge system capacity development in Maine.

Endnotes

Critical Benchmark #2 – 5: 11 of Maine's 36 hospitals have received 500 capsules (100 mg) Doxycycline and the remaining 26 hospitals received 1,000 capsules (100 mg) Doxcycline for a total of 31,500 capsules as part of the Maine Hospital Pharmaceutical Cache (MHPC). This is inadequate to provide prophylaxis. According to the 2001 report prepared by the Maine Hospital Association[23], there are currently 22,000 full- and part-time employees working in Maine hospitals. In addition, there are approximately 5,000 Emergency Medical Services (EMS) providers in Maine. The estimated sum of Maine health care employees and EMS providers is 27,000. Using a family factor of 2.39 (2000 Maine census data)[24] hospital employee and EMS providers times 27,000 (hospital employee and EMS providers) equals 64,530 personnel needing prophylaxis. Multiply by 6 doses (Doxcycline 100 mg BID[25] for 3 days) and the total amount of meds needed would equal 387,180 doses. (75% of 387,180 = 290,385 doses). Currently the Maine pharmaceutical caches have 31,500 doses statewide.

Medical Emergency Distribution System (MEDS) of Maine is part of Maine's comprehensive and coordinated planning effort to deploy a defined set of pharmaceuticals for use in public health emergencies in advance of any such emergency at defined locations throughout the state. These pharmaceuticals will include nerve agent antidotes, antibiotics, and other selected agents for use:

1. in initial treatment of victims of an intentional or accidental exposure to chemical or biological agents, and
2. for the prophylactic treatment of health care workers and their immediate family members in the event of a public health emergency in which such treatment is deemed appropriated. These pharmaceutical assets will include drugs from what has been known as the Maine Hospital Pharmaceutical Cache and will include drugs from the ChemPack program.

Maine is currently working on defining and developing a system that has a multi-faceted approach and which includes the ChemPack Project, the Maine Hospital Pharmaceutical Cache items and the forward placement of "Go Boxes." This plan is not unlike the nationwide effort to provide medication distribution in a large-scale public health emergency before the Strategic National Stockpile deployment occurs. More work continues to fully define the details, protocols and procedures for deployment of these meds. Currently, 10 locations have been tentatively located for the ChemPack deployment and work continues to work cooperatively with hospitals, Regional Resource Centers and EMS providers to assure adequate meds supplies are available.

[23] http://themha.org/pubs/Maine_s%20Healthcare%20Workforce.pdf
[24] http://factfinder.census.gov/servlet/ThematicMapFramesetServlet?_bm=y&-geo_id=01000US&-tm_name=DEC_2000_SF1_U_M00001&-ds_name=DEC_2000_SF1_U&-_MapEvent=displayBy&-_dBy=040&-_lang=en&-_sse=on#?460,149
[25] Twice daily

Appendixes:

Appendix A: Survey Findings: Assessment of Regional Health System Capacity for Public Health Emergency Response, Maine, 2004

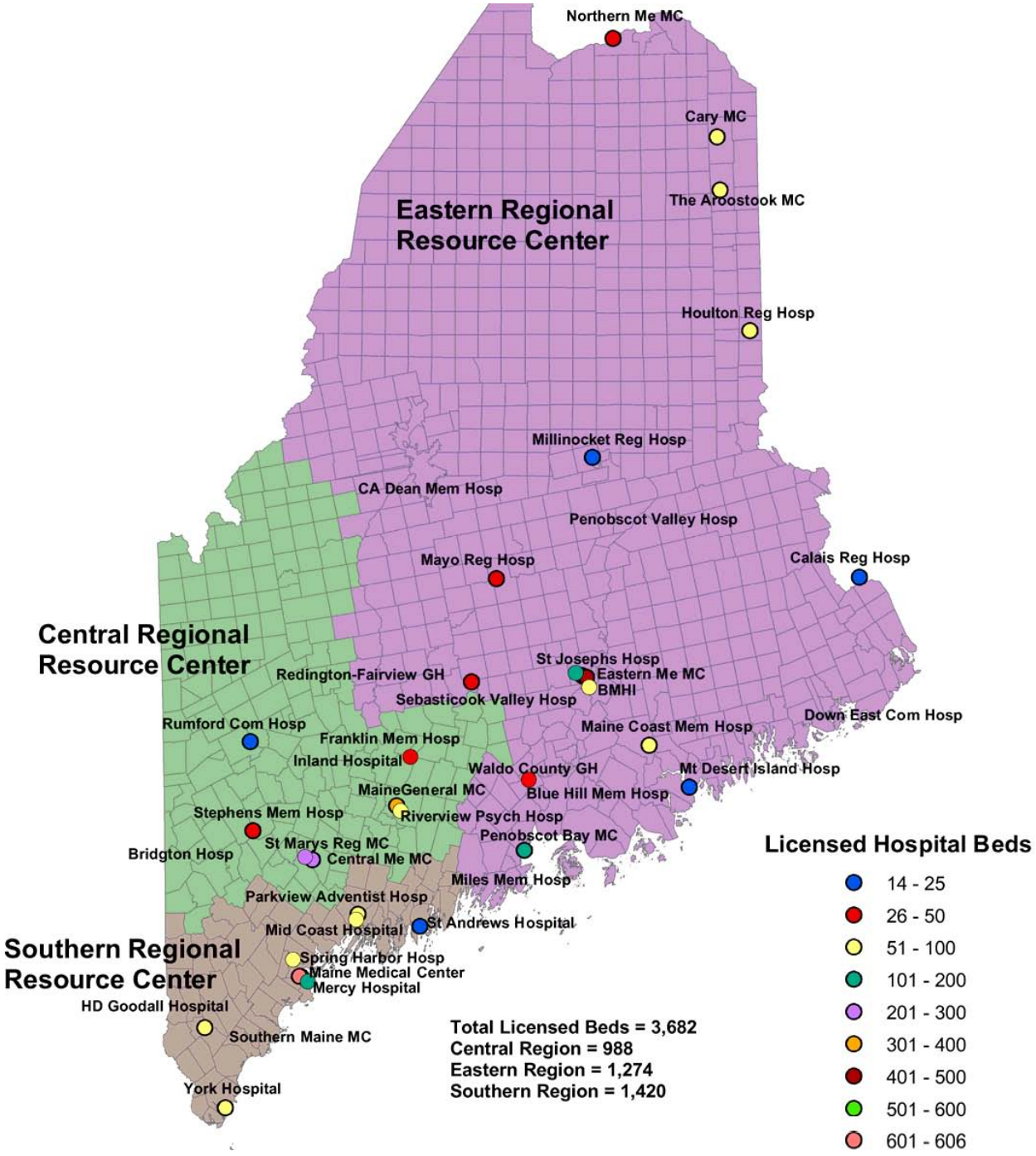
Appendix B: Central Regional Resource Center – 2004 Maine Regional Health System Survey Assessment, December 2004

Appendix C: Eastern Regional Resource Center – Assessment of Northeastern Regional Health System Capacity, Maine December 2004

Appendix D: Southern Regional Resource Center – Southern Maine Regional Health Systems Emergency Preparedness Needs Assessment Report, Maine November 2004

Appendix E: Map of Number of Licensed Beds, Maine, 2004

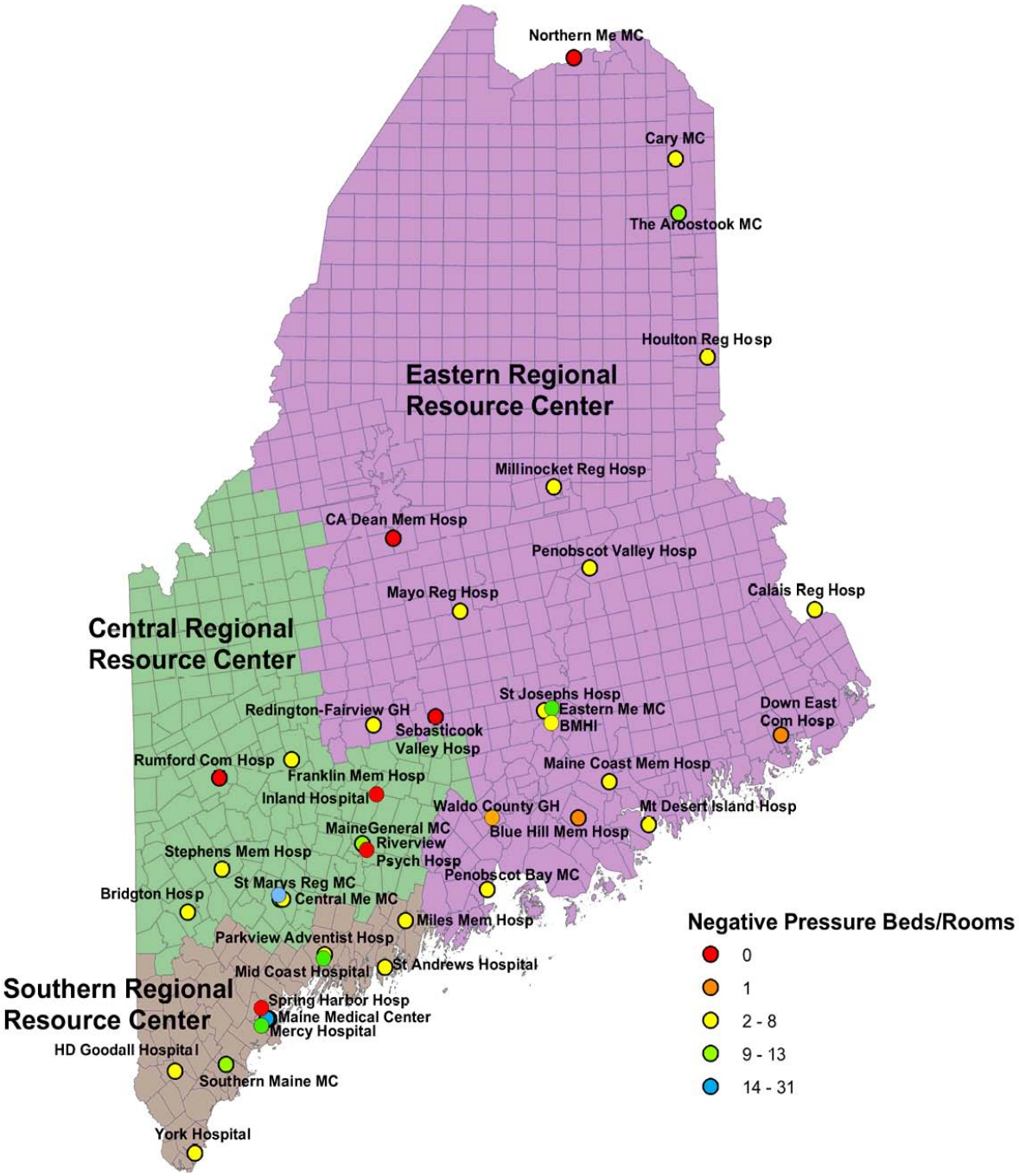
Figure 1. Number of Licensed Hospital Beds, Maine, 2004



Map created by the Office of Public Health Emergency Preparedness
Source: *Assessment of Regional Health System Capacity for Public Health Emergency Response,* Maine, 2004

Appendix F: Map of Negative Pressure Beds/Rooms, Maine, 2004

Figure 2. Negative Pressure Beds/Rooms, Maine, 2004

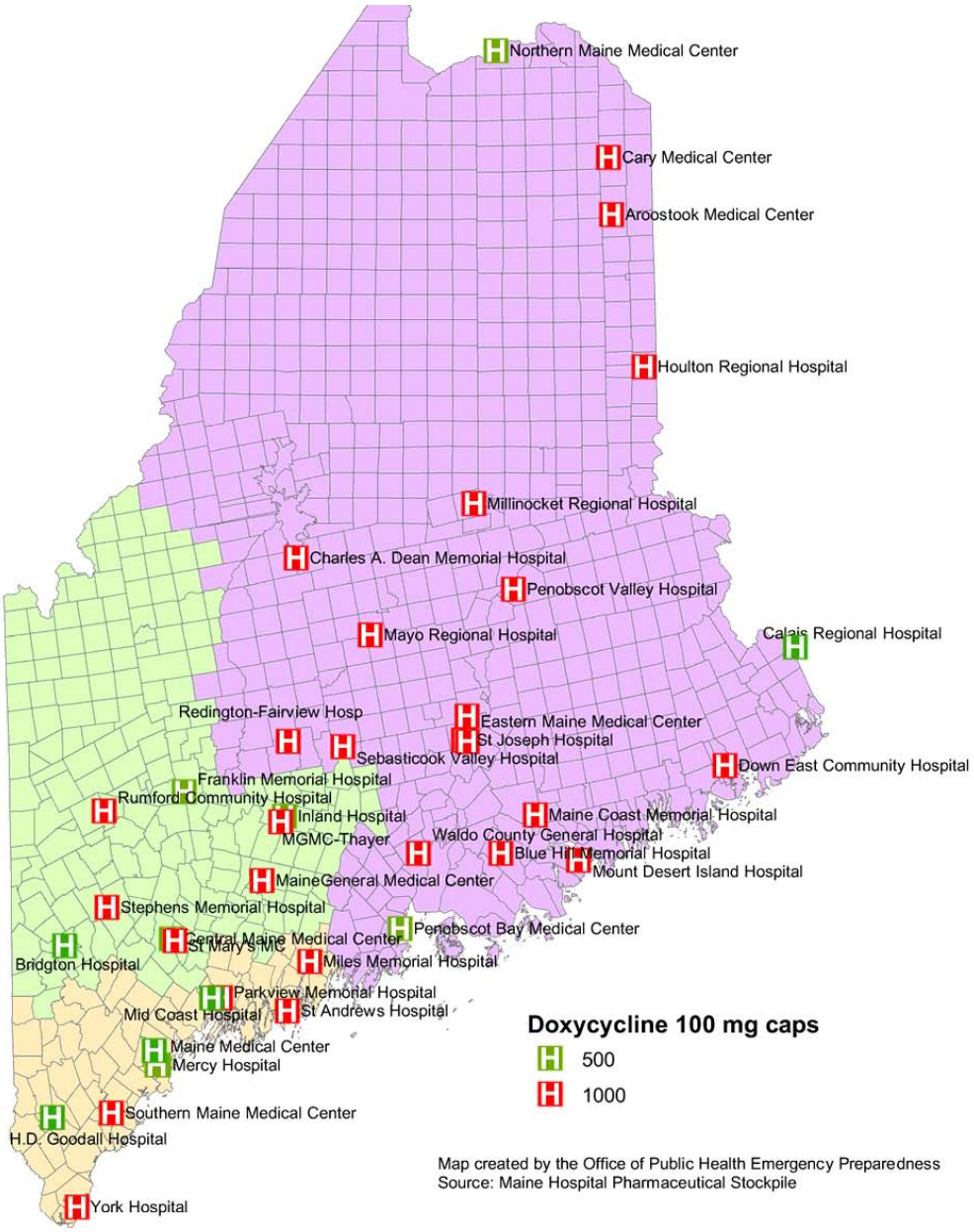


Map created by the Office of Public Health Emergency Preparedness

Source: *Assessment of Regional Health System Capacity for Public Health Emergency Response*, Maine, 2004

Appendix G: Map of Doxycycline, Maine, 2004

Figure 3. Map of Doxcycline, Maine, 2004



Appendix H: Equipment Purchased by Maine Emergency Management Agency (MEMA) for 40 Maine Hospitals, Maine, 2004

- Forty (40) Decontamination Tents (one for each hospital)
    - Heaters
    - Water Heaters
    - Lights
    - Decontamination Spray Hardware
    - Litter

- Two Hundred Forty (240) Personal Protection Equipment Kits (six units per hospital)
    - Kit Storage Bag
    - Tyvek Suit (Level B/C)
    - Nitrile Gloves
    - Steel Toed Boots
    - Breath Easy PAPR with Lithium Battery
    - NICAD Battery for Respirator Training
    - Battery Charger (will charge up to 5 batteries at a time)

Table 24. List of Maine's 41 Hospitals and Psychiatric Hospitals, 2004

Hospital Name	Region
Augusta Mental Health Institute	Central Region
Bridgton Hospital	Central Region
Central Maine Medical Center	Central Region
Franklin Memorial Hospital	Central Region
Inland Hospital	Central Region
MaineGeneral Medical Center	Central Region
Rumford Community Hospital	Central Region
St. Mary's Regional Med Center	Central Region
Stephens Memorial Hospital	Central Region
H.D. Goodall Hospital	Southern Region
Maine Medical Center	Southern Region
Mercy Hospital	Southern Region
Mid Coast Hospital	Southern Region
Miles Memorial Hospital	Southern Region
New England Rehab Hospital	Southern Region
Parkview Adventist Hospital	Southern Region
Southern Maine Medical Center	Southern Region
Spring Harbor Hospital	Southern Region
St. Andrews Hospital	Southern Region
York Hospital	Southern Region
Hospital Name	**Region**
Acadia Hospital*	Eastern Region
Bangor Mental Health Institute	Eastern Region
Blue Hill Memorial Hospital	Eastern Region
C.A. Dean Memorial Hospital	Eastern Region
Calais Regional Hospital	Eastern Region
Cary Medical Center	Eastern Region
Down East Community Hospital	Eastern Region
Eastern Maine Medical Center	Eastern Region
Houlton Regional Hospital	Eastern Region
Maine Coast Memorial Hospital	Eastern Region
Mayo Regional Hospital	Eastern Region
Millinocket Regional Hospital	Eastern Region
Mount Desert Island Hospital	Eastern Region
Northern Maine Medical Center	Eastern Region
Penobscot Bay Medical Center	Eastern Region
Penobscot Valley Hospital	Eastern Region
Redington-Fairview Gen Hosp	Eastern Region
Sebasticook Valley Hospital	Eastern Region
St. Joseph Hospital	Eastern Region
The Aroostook Medical Center	Eastern Region
Waldo County General Hospital	Eastern Region

*Acadia Hospital was not awarded the decontamination tent equipment from Maine Emergency Management Agency.

Appendix I: "DRAFT" Statement of Understanding Between the Maine Department of Health and Human Services and the American Red Cross, 2004

Scope of Work

The Maine Department of Health and Human Services and the American Red Cross have agreed that each organization has distinct responsibilities for the provision of behavioral health services during a disaster.

The Maine Department of Health and Human Services acknowledges the federally mandated role of the American Red Cross in disasters, especially its role in the primary disaster site at designated Red Cross shelters and Red Cross services delivery sites. The Department of Health and Human Services recognizes that the American Red Cross has responsibility for the disaster site in terms of basic needs and short-term mental health services. The American Red Cross will have primary responsibility for providing mental health services to disaster victims and their families at designated Red Cross shelters and Red Cross services deliver sites. The Maine Department of Health and Human Services will have primary responsibility for providing behavioral health services to disaster victims and their families in their place of residence, as well as providing outreach oriented crisis services.

The American Red Cross acknowledges that the Maine Department of Health and Human Services is responsible for meeting the behavioral health needs of Maine citizens that meet service eligibility requirements. The Maine Department of Health and Human Services shall have the primary responsibility of providing behavioral health support services to individuals and the affected community in settings such as schools, nursing homes, specialized shelters, etc through its crisis response network. The Maine Department of Health and Human Services may provide behavioral health services upon request of the American Red Cross and may provide services when the American Red Cross transitions out of the affected disaster area.

The American Red Cross also acknowledges that upon activation of the State Response Plan, the Maine Department of Health and Human Services may provide other services or assets as requested by the Governor or the Director of the Maine Emergency Management Agency. Under the State Response Plan, the Maine Department of Health and Human Services has agreed to provide behavioral health services to support the response of other State agencies to declared major disasters or emergencies.

American Red Cross may request additional behavioral health resources through the Maine Department of Health and Human Services to support their on-site behavioral health response. It is understood that those individuals would be working under the supervision of the Maine Department of Health and Human Services response network and would be identified as such so as to differentiate these staff from American Red Cross Disaster Mental Health Services volunteers.

The American Red Cross may utilize Maine Department of Health and Human Services behavioral health staff that have been American Red Cross trained at the disaster site or at an American Red Cross headquarters. It is understood that these staff would be working under the auspices of the American Red Cross.

The American Red Cross and Maine Department of Health and Human Services agree that either party may also utilize non-licensed behavior health responders that are indigenous to the community. Non-licensed behavioral health responders will be required to receive training in core competencies, recognized by both the Maine Department of Health and Human Services and the American Red Cross, prior to participating in a disaster response effort on behalf of the Maine Department of Health and Human Services or the American Red Cross. It is understood that those individuals would be working under the supervision of the Maine Department of Health and Human Services response network and would be identified as such so as to differentiate these staff from American Red Cross Disaster Mental Health Services volunteers.

Appendix J: "Draft" Standards for State of Maine Radio Systems, August, 2004

The Maine Emergency Management Agency (MEMA) has been asked to suggest basic standards that an interoperable radio communication system should adhere to. These are our recommendations. The standards seek to provide for interoperability across radio communications systems throughout the state. The standards also ensure technical compatibility among users.

Additionally, the recommendation proposes a strategy for the development of the state backbone and the interface of local systems to that backbones system.

Frequency compatibility is an essential component of an interoperable system. The VHF hi band frequency range (153 to 174 MHZ) provides the best comprise of features and range for voice communication give the State of Maine's topography. UHF has been proven to be very expensive in the communities where it has been deployed and would be extremely expensive to deploy statewide. The State backbone system will be developed utilizing VHF.

Integral to the backbone network will be dedicated interoperability channels. Local entities eligible to operate in the Federal Communications' Public Safety Radio Service will be allowed to apply to the State for access to those interoperability channels.

There likely will be instances where urban communities that use UHF radio systems will need to access the VHF backbone system. This major impediment to universal interoperability will be addressed by developing strategically placed cross-band portals and with mobile communications vans with equipment on board dispatched to the impacted area. The State of Maine will coordinate with any communities utilizing UHF networks that wish to establish a cross-band capability of their own to interface with the State backbone.

VHF can support data transmission by HI SPEED DATA is best suited to UHF. The State will examine the feasibility of establishing hi speed data nets in highly populated urban areas where the need is greatest and lower speed VHF nets in the more rural areas. Leased commercial services will be considered for temporary initial solution and use in the leased populated areas of the State of Maine.

Frequency availability will be an issue if the State pursues a VHF solution. The State of Maine will develop a strategy for pooling and reallocating currently licensed frequencies in conjunction with the migration to narrow band formats to minimize those issues.

Employing narrow band technology in an interoperable system would require coordination with the local entities. The State of Maine will develop a timetable for converting to narrow bandwidth channels on the backbone network so that local entities may plan for concurrent development of their systems.

Obtaining Canadian approval for frequency coordination will likely be a time consuming process. The State of Maine will begin the process of FCC license application and frequency coordination of existing sites and the selection and development of required new site locations so that obtaining the necessary FCC licenses would be guaranteed before much funds are expended.

The most immediate issue for the State, however, is not interoperability. It is the maintenance and development of the State's existing two-way radio communications networks. Refreshment of the existing VHF system will begin immediately. This project will include the development of existing and the procuring of new communications sites. As much as possible, new sites will be locate on State owned/acquired property to avoid additional vulnerability to escalating property lease fees.

Appendix K:
Table 25. Number of Beds, Hospitals, Totals and Regional Totals, Maine, 2005

Total Number of Beds By Region	Licensed Beds	Staffed Beds	Surge Capacity
Statewide Total	**3,682**	**3,097**	**585**
Central Region Total	**988**	**808**	**180**
Bridgton Hospital	25	21	
Central Maine Medical Center	250	189	
Franklin Memorial Hospital	70	57	
Inland Hospital	48	48	
MaineGeneral Medical Center	287	247	
Rumford Hospital	25	25	
St. Mary's Regional Medical Center	233	171	
Stephen's Memorial Hospital	50	50	
Eastern Region Total	**1,274**	**1,038**	**236**
Blue Hill Memorial Hospital	25	25	
Calais Hospital	25	25	
Cary Medical Center	65	49	
CA Dean Memorial Hospital	14	14	
Down East Community Hospital	36	25	
Eastern Maine Medical Center	411	329	
Houlton Regional Hospital	25	25	
Maine Coast Memorial Hospital	64	48	
Mayo Regional Hospital	25	25	
MDI Hospital	25	25	
Millinocket Regional Hospital	21	15	
Northern Maine Medical Center	49	36	
Penobscot Bay Medical Center	109	80	
Penobscot Valley Hospital	25	25	
Redington-Fairview General Hospital	65	65	
Sebasticook Valley Hospital	28	25	
St. Joseph Hospital	112	82	
The Aroostook Medical Center	105	75	
Waldo County General Hospital	45	45	
Southern Region Total	**1,420**	**1,251**	**169**
H.D. Goodall Hospital	49	49	
Maine Medical Center	606	567	
Mercy Hospital	230	168	
Mid Coast Hospital	104	74	
Miles Memorial Hospital	35	35	
New England Rehab Hospital of Portland	100	90	
Parkview Adventist Medical Center	55	51	
Southern Maine Medical Center	150	130	
St. Andrews Hospital	25	21	
York Hospital	66	66	

Source: Sandra Parker at Maine Hospital Association
Licensed beds: Total number of beds licensed and currently authorized for use by the state.
Staffed beds: Number of beds regularly available (set up and staffed for use). Report only operating beds, not constructed bed capacity. Include all bed facilities that are set up and staffed for use by inpatients who have no other bed facilities, such as pediatric bassinets, isolation units, quiet rooms, and reception and observation units assigned to or reserved for them. Exclude newborn bassinets and bed facilities for patients receiving special procedures for a portion of their stay and who have other bed facilities assigned to or reserved for them. Exclude, for example, labor room, postanesthesia, or postoperative recovery room beds, psychiatric holding beds, and beds that are used only as holding facilities for patients prior to their transfer to another hospital.

References

Bioterrorism Risk Communications Planning with Special Populations (2003). Policy Studies Inc, Cambridge, MA.

Department of Health and Human Services, Health Resources and Services Administration. *Technical and Policy Guidelines, Standards and Definitions* for the Emergency System for Advanced Registration of Volunteer Health Professionals (ESAR-VHP) Program

Edwards, M., & Friese, D., (2003). *County-based Health System Emergency Preparedness Assessment*. Portland, Maine: University of Southern Maine, Muskie School of Public Service.

EMSSTAR Group LLC (2004). *An Assessment of the Maine EMS System.* Annapolis, MD: State of Maine Department of Public Safety, Maine Emergency Medical Services.

Maine Center for Pubic Health, (2003). *Bioterrorism and Public Health Emergency Preparedness and Response: Maine's Training Plan.* Augusta, ME

Maine Emergency Management Agency, (2003). *State Homeland Security Strategy*. State of Maine Department of Defense, Veterans and Emergency Management Augusta, ME

Maine Emergency Management Agency, (2004) *Draft Standards for State of Maine Radio Systems.* State of Maine Department of Defense, Veterans and Emergency Management, Augusta, ME

Maine Emergency Medical Services *"DRAFT" Trauma System Plan* (2004). State of Maine Department of Public Safety, Maine Emergency Medical Services.

Maine Health Research Institute, University of Maine at Farmington (2003). *Health Alert Network Assessment & Planning Project HAN Survey Summary.* Farmington, ME, State of Maine Department of Human Services, Bureau of Health.

Maine Public Health and Environmental Testing Laboratory, State of Maine Department of Human Services (2003). *Bioterrorism Preparedness Sentinel Laboratory Assessment.* Augusta, ME.

Office of Public Health Emergency Preparedness, Maine Bureau of Health, State of Maine Department of Human Services (2002). *Maine Hospital Assessment Survey for Emergency Preparedness.* Augusta, ME.

Office of Public Health Emergency Preparedness, Maine Bureau of Health and Northern New England Poison Center (2003). *Maine Hospital Pharmaceutical Stockpile*. Augusta, ME

Office of Public Health Emergency Preparedness, Maine Bureau of Health, State of Maine Department of Human Services (2003). *Regional Resource Centers for Public Health Emergency Preparedness Activities, Requirements, and Resources.* Augusta, ME.

Office of Public Health Emergency Preparedness, Maine Bureau of Health, State of Maine Department of Health & Human Services (2004). *Survey Findings: Assessment of Regional Health System Capacity for Public Health Emergency Response*, Maine, Augusta, ME.

OSHA Best Practices for Hospital-Based First Receivers of Victims from Mass Casualty Incidents Involving the Release of Hazardous Substances" (2004). pp A9-A11. Retrieved January 3, 2005 from the World Wide Web: http://www.osha.gov/dts/osta/bestpractices/firstreceivers_hospital.pdf

Skidmore, Susan, et al., *Modular Emergency Medical System: Concept of Operations for the Acute Care Center* (2003). pp. 19-21. Retrieved January 3, 2005 from the World Wide Web: http://www.edgewood.army.mil/downloads/bwirp/acc_conops_200305.pdf